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| 10/825,718 | 04/16/2004 | Alan E. Humphrey | 2100356-991113 | 9950 |

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| EXAMINER |
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HOLLINGTON, JERMELE M

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| ART UNIT | PAPER NUMBER |
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2829

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,718

Applicant(s)

HUMPHREY ET AL.

Examiner

Jermele M. Hollington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9,16-19 and 23-28 is/are allowed.
- 6) ☒ Claim(s) 1-8,10-15,22,29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/06.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8, 10-12 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamasaka (6130104).

Regarding claim 1, Yamasaka discloses [see Figs. 1 and 6] a cleaning device (cleaner 1), comprising: a cleaning pad (cleaner layer 4) capable of being adhered to a substrate (substrate 5) that cleans a probe element (probe 17A) of a prober (probe card 17 in Fig. 3) wherein the probe element (17A) is capable of being inserted into the cleaning pad (4) [see Figs. 1A and 1B]; and wherein the cleaning pad (4) further comprises a working surface (elastic material layer 2) into which the probe element (17A) is inserted, the working surface (2) having a characteristic [see col. 7, lines 18-44] that permits the prober (17) to determine the location of the working surface (2) of the cleaning pad (4).

Regarding claim 2, Yamasaka discloses the characteristic of the working surface (2) of the cleaning pad (4) further comprises a matte surface finish (skin film 2A) that is formed by a release liner removed from the working surface (2) prior to use so that said prober (17) that uses optical energy is able to detect the location of the working surface (2) of the cleaning pad (4).

Regarding claim 3, Yamasaka disclose the characteristic of the working surface (2) of the cleaning pad (4) further comprises a conductive surface (skin film 2A) so that said prober that uses conductance is able to detect the location of the working surface (2) of the cleaning pad (4).

Regarding claim 4, Yamasaka discloses the cleaning pad (4) further comprises an additive (filler 3) so that the cleaning pad (4) is conductive.

Regarding claim 5, Yamasaka discloses the additive (3) further comprises at least one of conductive carbon-graphite particles or fibers (glass fibers 3A), metal plated abrasive particulates or fibers, and metallic particulates or fibers.

Regarding claim 6, Yamasaka discloses the cleaning pad (4) further comprises a conductive polymer (filler 3).

Regarding claim 7, Yamasaka discloses the conductive polymer (3) further comprises one of polyanilenes, polypmoles and polythiophenes [see col. 7, lines 18-51].

Regarding claim 8, Yamasaka discloses [see Figs. 1 and 6] a method for fabricating a cleaning device (cleaner 1) whose working surface (elastic material layer 2) is capable of being detected by a prober device (probe card 17 in Fig. 3), the method comprising: forming said cleaning device (1) having said working surface (2); and removing a layer (skin film 2A) from the working surface (2) wherein the removal of the layer (2A) imparts a matte finish to the working surface (2) of the cleaning device (1).

Regarding claim 10, Yamasaka discloses [see Figs. 1 and 6] a method for the automatic detection of a cleaning device (cleaner 1), comprising: detecting a working surface (elastic material layer 2) of the cleaning device (1); and performing a cleaning operation based on the detected working surface (2) of the cleaning device (1).

Regarding claim 11, Yamasaka discloses detecting further comprises directing optical energy towards the working surface (2) of the cleaning device (1) and determining the location of the working surface (2) of the cleaning device (1) based on the optical energy reflected off of the working surface (2) of the cleaning device (1).

Regarding claim 12, Yamasaka discloses detecting further comprises measuring [via probe card 17] the conductance of the working surface (2) of the cleaning device (1) in order to determine the position of the working surface (2) of the cleaning device (1).

Regarding claims 20-21, Yamasaka discloses a method for cleaning a probe element (probe 17A) of a prober (probe card 17 in Fig. 3) for semiconductor devices, the method comprising: providing a cleaning device (cleaner 1) having a pad (cleaner layer 4); inserting the probe element (17A) into the pad (4) [see Figs. 1A and 1B] and wherein a tip of the probe element (17A) is reshaped during the cleaning.

3. Claims 13-15, 17-19, 22-24 and 26-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugiyama et al (6118290).

Regarding claims 13 and 22, Sugiyama et al disclose [see Figs. 1-2 and 4] a method for testing semiconductor device (wafer W) in an automatic cleaning mode, the method comprising; performing [via test head 19] testing of semiconductor devices (W); during the testing operation, automatically determining that a cleaning [via cleaner tool 20] is to be performed; automatically determining the location of a working surface (not number but shown) of a cleaning device (20) based on a characteristic of the working surface; performing the cleaning using the cleaning device (20); and continuing the testing of semiconductor device (W).

Regarding claims 14 and 23, Sugiyama et al disclose determining that cleaning is to be performed further comprises measuring [via test head 19] the parameters of each semiconductor device (W) being tested and initiating a cleaning step when the measured parameters vary from a normal value.

Regarding claims 15 and 24, Sugiyama et al disclose determining that cleaning is to perform further comprises performing a cleaning step after a predetermined number of testing operations.

Regarding claims 17 and 26, Sugiyama et al disclose determining the working surface of the cleaning device (20) further comprises measuring [via test head 19] the conductance of the working surface of the cleaning device (20) in order to determine the position of the working surface of the cleaning device (20).

Regarding claims 18-19 and 27-28, Sugiyama et al disclose performing the cleaning further comprises moving the probe element (17A) in a horizontal orbital motion.

Regarding claim 29, Sugiyama et al disclose the cleaning pad (20) further comprises an abrasive incorporated into the cleaning pad (20).

Regarding claim 30, Sugiyama et al disclose the abrasive further comprises one of aluminum oxide, silicon carbide and diamond.

Conclusion

4. Applicant's arguments filed Jan. 9, 2006 have been fully considered but they are not persuasive.

The applicants' argue: *"Similarly, the skin film 2A of Yamasaka does not have any working surface characteristic, such as a matte finish, texture or morphology that permits a prober to detect the skin film 2A of the cleaner 1 of Yamasaka. In fact, Yamasaka does not even discuss the skin film surface nor what characteristics that*

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skin film has. Finally, Yamasaka also does not disclose that locating the skin film 2A by a prober is a problem nor that the skin film 2A should have a particular characteristic to permit the skin film (the working surface) to be detected by a prober. Therefore, Yamasaka does not anticipate independent claims 1 and 10 (directed to a working surface having a characteristic to permit the prober to determine the location of the working surface of the cleaning pad) nor independent claim 8 directed to a working surface having a matte finish to permit the prober to determine the location of the working surface of the cleaning pad. Yamasaka also does not anticipate the claims that depend from claims 1, 8 and 10."

In response to the above arguments, the examiner disagrees that the Yamasaka does not disclosed a particular limitations of the claimed invention. Referring to claims 1 and 10, the claims do not go into depth about "working surface having a characteristic..." With that in mind, the examiner was taking the position stated in MPEP 2111, which is to give pending claims the broadest reasonable interpretation. Furthermore, the examiner believes that the prior art suggests having a characteristic as claimed. The examiner uses elastic material layer 2 as the working surfaces of the cleaning pad, which is represented as cleaning layer 4. In col. 7, lines 18-44, it goes into details concerning the cleaning layer 4, which consist of, as stated above, layer 2 as well as filler 3. Inside the stated column 7, it states: "An example of the function that improves the surface state of the probe needles includes removal (abrasion) of the attaching substance by scraping, removal of the attaching substance by polishing, burr removal, and surface roughening." Therefore, the examiner believes that the prior art still reads on the claimed invention.

The applicants' further argue: "*Claims 13-15, 17-19, 22-24 and 26-30 were rejected based on Sugiyama. In the rejection, the examiner states, for claims 13 and 22, that Sugiyama discloses "automatically determining the location of the working surface of the cleaning device (20) based on a characteristic of the working surface...." Yamasaka discloses a cleaner tool 20 that does in fact have a working surface that faces up towards the probe 17A. However, Sugiyama does not disclose that the working surface of the cleaner tool 20 has a particular*

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characteristic that permits the prober 17A to detect the cleaner tool 20. In fact, like Yamasaka, Sugiyama does not even discuss the working surface of the cleaner tool 20 not that the working surface of the cleaner tool 20 has any particular characteristics. Finally, Sugiyama also does not disclose that locating the cleaner tool 20 by the prober 17A is a problem nor that the cleaner tool 20 working surface should have a particular characteristic to permit the working surface to be detected by a prober. Therefore, Sugiyama does not anticipate independent claims 13 and 22 (directed to automatically detecting a working surface having a characteristic to permit the prober to determine the location of the working surface of the cleaning device) Sugiyama also does not anticipate the claims that depend from claims 13 and 22."

In response to the above arguments, the examiner disagrees that the Yamasaka does not disclosed a particular limitations of the claimed invention. Referring to claims 13 and 22, like Yamasaka, the claims do not go into depth about "...a working surface... based on a characteristic..." With that in mind, the examiner was taking the position stated in MPEP 2111, which is to give pending claims the broadest reasonable interpretation. Furthermore, the examiner believes that the prior art suggests having a characteristic as claimed. The examiner uses cleaner tool 20 as the working surfaces of the cleaning pad. In col. 7, line 65- col. 8, line 17 and col. 10, lines 31-49, it goes into details concerning the cleaner 20 and what is the function of the cleaner. Therefore, the examiner believes that the prior art still reads on the claimed invention.

5. Claims 9, 16-19 and 23-28 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: the reasons for the allowance of claims 9, 16 and 25 have been given in the previous Office Action mailed on July 8, 2005. Claims 17-19, 23-24 and 26-28 depend from one of the above-allowed claims.

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Since the examiner has not change the rejection of the previous Office Action, the following is being applied.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

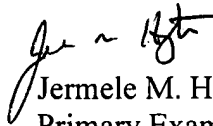
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (517) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jermele M. Hollington
Primary Examiner
Art Unit 2829

JMH
March 16, 2006